The Scole November, 1948

PUBLISHED BY THE STUDENTS OF THE MASSACHUSETTS SCHOOL OF OPTOMETRY



# THE SCOPE



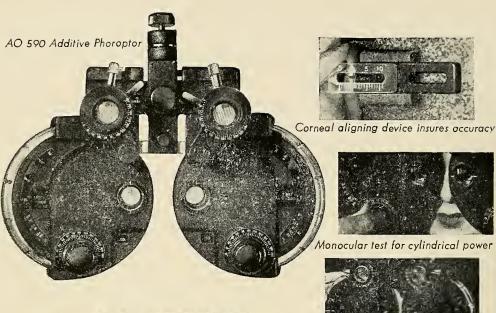
Volume XIX

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# November, 1948

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# COLOR BLINDNESS

by Meyer Izbitsky

(I am deeply indebted to Drs. Green and Cline for their aid in editing this article.)

The study of color blindness dates from 1794. In that year the famous English chemist, John Dalton, published an account of his own case of achromatopia, which he did not know existed until he was twenty-six years old. Today some still refer to the condition as Daltonism in honor of the famous chemist who brought the subject into notice.

Color blindness may be defined as a condition which produces an inability to distinguish a color or colors correctly. The severity of the condition varies. Persons suffering from complete color blindness will see no color at all, they will perceive only light and shade or black and white. Generally, however, the condition is found to be partial, the persons affected being unable to distinguish one or two of the fundamental colors (red, green, and violet). A usual classification of color blindness is as follows:

- 1. Trichromasy: Trichromatic or normal color vision.
- 2. Dichromasy or Dichromatopia: Partial color blindness.
  - a. Protanopia: Red-blindness.
  - b. Deuteranopia: Green-blindness.
  - c. Tritanopia: Blue or violet blindness.
- 3. Monochromasy or Achromatopia: Total color blindness.

The partially color-blind may or may not suffer a loss of visual acuity. The totally color-blind, however, usually have diminished visual acuity, photophobia, and involuntary movements of the eyeballs (nystagmus). Some cases show a central scotoma.

The results of many investigations seem to show that color blindness is more common with men than with women. The United Public Health Service reported that of a thousand persons examined 9% of the men and 2% of the women were more or less color-blind. Of this number, 3% of the men and 0.5% of the women were color-blind to the extent as to render it dangerous for them to be engaged in occupations requiring proper recognition of colored lights. Other studies have shown that one man in twenty is unable to distinguish the near shades of color, and one in fifty is unable to identify certain primary colors from one another. It sometimes happens that persons afflicted with color blindness may distinguish colors accurately at near but they are unable to do so at a distance.

Color blindness may be either congenital or acquired. Acquired color blindness may be the result of injury or disease of the retina, optic nerve, and cerebral conduction paths of the sensory apparatus, or may be caused by the excessive use of drugs, tobacco, or alcohol. One eye or both may be affected, and the condition may be temporary or permanent. Congenital color blindness is hereditary and incurable. It is considered to be a male-sex-linked characteristic carried by a gene in the X-chromosome that is transmitted through the female. For example, the daughter of a color-blind father may not be color-blind although she may pass the defect on to her son or daughter; she may be color-blind, however, if her mother happens to be a transmitter. To date, very little can be done for color-blind people. Vitamin A has cured some cases, also the use of color filters and exposure to certain wavelengths have been utilized.

Several theories have been advanced to give an adequate explanation of color blindness. None, however, are entirely satisfactory, since they fail to explain all the color phenomena. In all probability the color-blind person lacks some particular mechanism for perceiving colors that the person with normal color vision possesses. The Ewald Hering theory of oppon-

ent colors maintains that the retina contains three pairs of visual materials, namely, whiteblack, red-green, and blue-yellow. According to this theory color blindness results from the absence of one or more of these materials. The Young-Helmholtz physical theory of color vision, however, maintains that there exist in every normal person three primary perceptions: red, green, and violet. In the absence of any one the sense of color becomes defective. This theory is partially based on the fact that the common forms of color blindness are green, red, and red-green blindness. Of more recent date is the Ladd-Franklin genetic theory, which maintains that color vision developed in three stages. In the first stage a white or gray material developed from the decomposition of a primitive photochemical compound. In the second stage the white or gray material gave rise to a blue and a yellow material. In the third stage the yellow material gave rise to red and green materials. According to this theory we experience four primary color sensations; red, yellow, green, and blue. To obtain these and white also, however, only red, green and blue are required.

Many tests have been arranged for the detection of color blindness. The tests determine the patient's ability to distinguish colors likely to be confused with the standard color. The tests used consist of skeins of colored wool, including various tints and shades of the same color, colored plates, lanterns, and spectroscopes. Usually several of these tests have to be employed, since some color-blind persons reluctant to disclose their condition have been able to find out the correct answers for some of the tests.

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# THE NORTHEAST OPTOMETRIC CONGRESS

The Northeast Congress, sponsored by the Optometric Extension Program was held at the Hotel Statler, Boston, October 24, 25, and 26. The lectures were well attended by optometrists in all the New England states and by some from outside the area. The theme of the entire Congress was three-dimensional space in visual training.

After an opening address of welcome by Dr. Edwin P. Leonard, Jr., Dr. A. M. Skeffington made what might be called the keynote speech of the Congress. Dr. Skeffington is one of the directors of OEP and has devoted himself for many years to postgraduate education exclusively.

Dr. Skeffington stated the following postulates as the basis for the Congress:

- 1. Visual problems are visual space problems.
- 2. The visual problems are problems of distortion in space manipulation, the handling of the three dimensions.
- 3. The distortions of manipulation in visual space are alterations between the factors of the dual effector system used for the maintenance of equilibrium in space.
- 4. There can be many causes for these distortions—structural, systemic and functional.
- 5. There is, however, no need for confusion; for if the problem is functional it will display the syndrome of functional disturbance, the systemic and structural syndromes will be absent.
- 6. The main properties of seeing are not contained in the visual data.
- 7. Seeing proceeds beyond the simple recognition of contour discrimination and localization, with the loading or freighting of the visual data with the total experiences of the organism. Acuity is contour discrimination.
- 8. The symbolic seeing level is more important to man in his cultural environment than the low-level skill of acuity and binocularity.
  - 9. All seeing is tri-dimensional.
  - 10. The operation of seeing on the printed (Please turn to page 11)

# OPTOMETRIC PATHOLOGY

### TAKING THE FIELD IN NEURASTHENICS

by Arthur Bruce, M.D.

To take fields properly requires considerable patience and skill on the part of the examiner. Many cases of ocular and intracranial pathology have characteristic field changes.

The character of the field found in neurasthenics is commonly known as the "fatigue field". The asthenopia often found in neurotic patients may also show in the shifting field first described by Förster, in which the extent of the field is greater on the side where the test is begun. For example: if we start on the temporal side and cross over to the nasal side through the fixation point, we shall find that the test-object will disappear on the nasal side nearer to the fixation point, showing greater contraction on that side. If, however, we start on the nasal side, we shall find that side of the field greater—thus, we find that the broader side of the field shifts.

Dr. Wilbrand's exhaustion test is practically the same but confined to the horizontal meridian. At each repetition of the test in the same meridian, the field is reduced. In testing neurotic patients, the smallest obtainable field is called the minimal visual field and the largest is the maximal visual field.

When the test is made with a white testobject, it has been found that the fatigue for color is not affected as much as it is for white and vice versa. These cases, if examined repeatedly by taking a complete field several times, will show that it becomes smaller and smaller and a line connecting the points assumes a *spiral* form.

Occasionally we find a patient who has the "oscillating field of Wilbrand"; in this visual field the test-object disappears and reappears, (Please turn to page 11)

Modern refractive techniques have demonstrated the need for "uncommon" lens devices. Where significant factors indicate a large number of patients better satisfied, the refraction more successful—the "uncommon" becomes the "common".

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# LECTURE ON SUBNORMAL VISION

Dr. William Feinbloom, noted authority on contact lenses, addressed the senior class October 1 on "Subnormal Vision Aids." He explained the meaning of the term, discussed the causes of subnormal vision, and compared the results of the various aids, which he showed during the lecture. Among these aids were the multiple pinhole spectacles, the stenopaic lens. telescopic and microscopic spectacles, contact lenses, and the hemianopsia mirror correction device. In the course of the lecture and the demonstration he gave the class a number of practical pointers in handling subnormal vision cases, pointers which can be gained only by practical experience and which many average practioners do not possess.

Subnormal vision, Dr. Feinbloom said, may be caused by trauma, by pathology, or at birth. It affects the cornea, the crystalline lens, the vitreous and aqueous humors, the receptive apparatus, and the brain. It is important to recognize the patient's personality and also to know whether he has recently acquired subnormal vision or has suffered from it a long time.

Dr. Feinbloom then explained for what cases various subnormal vision aids may be useful. Multiple pinhole spectacles will help in a case of corneal opacity; a stenopaic slit lens in incipient cataract. Irregular astigmatism may call for a pinhole, and in some such cases contact lenses are very effective. In subnormal vision we always take the V. A. binocularly, because even though the patient does not have single binocular vision we do not want to disturb his psychological set. Some cases, out of reach of telescopic lenses because as the power increases the field becomes too small, call for microscopic lenses. The usual objection to thick lenses does not apply here because in these cases the cosmetic effect is less important than vision itself.

These are but a few of the points the lecturer made, which should help us in the handling of subnormal vision cases. He stressed especially the importance of considering the psychological aspects in the clinical handling of subnormal-

(Please turn to page 10)



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### THE SCOPE

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# From the Editor . . .

We are much disappointed that the support so far given to the American Optometric Foundation is hardly commensurate with the initial approval given to the project by the profession earlier in the year.

Faculty Advisor...... WENDELL F. FOGG, Ed. M.

Optometry took a great step forward as a profession when it decided to create, stand behind and support the American Optometric Foundation. When this Foundation was created at the beginning of this year, it was enthusiastically hailed by the state associations, by the prac-

ticing members of the profession, and by us still in the schools of optometry: in fact, by everyone connected with optometry.

In the first report delivered by the Treasurer of the AOF, Dr. Frederick A. Stengel, during the American Optometric Association's Congress in San Francisco in June, he reported that the Foundation had received pledges during its first year of existence totaling \$88,000, \$27,784.48 of which had actually been collected. On the surface this seems a gratifyingly large amount, but it is still far, far short of the initial goal of one million dollars which the Foundation had set itself. And since according to the statutes of the Foundation it is only allowed to operate from the accumulated interest of the contributions, the amount the Foundation can spend therefore, is limited to a mere \$131.25.

Certainly 131 dollars will not even hire a stenographer or rent an office, much less start the ambitious program of the AOF which calls for scholarships, research, optometric education, optometric experimentation, and grants-in-aid to graduate optometrists, all designed to better the profession as a whole and to place it on a par with the other professions.

Everyone is agreed that the Foundation fills a void and a need which should have been filled long ago, and that the profession will be immeasurably furthered by it, but it is not enough to support in ideology alone. Contributions are needed as well. The best way to help the profession, the people you serve and yourself is by the voluntary contributions to the Foundation, and it is only the practitioner, who will make the AOF the complete success we all hope it is going to be.

Now is the time to support the American Optometric Foundation, not only morally but also with a checkbook and a pen.

E. W.

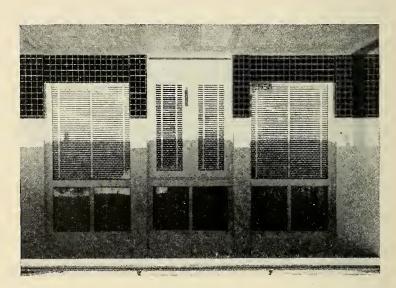
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front conforms to the dictates of professionalism. Windows that might easily display frames, lenses and cases, have only blinds. The only sign is one of proper size for professional indentification.



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- 1. Eliminate your "display window."
- 2. Remove fitting table and displays from reception room.
- 3. Remove outdoor sign, replace with dignified name plate.
- 4. Render professional services on a fee basis, instead of "selling" eye glasses.

# Pi Omicron Sigma

# Omega Epsilon Phi

Allan Lubin and Gerald Davis

by Milton Gallin

The 36th year of Pi Omicron Sigma promises to be one of the biggest in the fraternity's history. The first big event was the moonlight cruise on the S. S. Pilgrim Belle, in which the cruising eyeballs floated around the dance floor with their female companions.

Friday, October 15, POS held its 36th annual smoker at the Ritz Plaza Halls. Once again we had the pleasure of playing host to the new members of the freshman class, faculty, and alumni. Among the honored guests were Dr. Ralph Green, dean of MSO, Dr. Foster Namias, Dr. Fredrick Farnum, Dr. Joseph Antanelis, Dr. Harold Cline, Dr. Louis Wekstein, Dr. John Asarkoff, Dr. Mitchell Kuhn, Dr. Seymour Saltzman, and Mr. Wendell Fogg. Several alumni, now doctors, were on hand to make the picture complete.

Brother Abe Gottesman did a wonderful job as our witty emcee in the absence, due to unforeseen circumstances, of Chancellor Norman Ruby and exchequer Joseph Barresi.

The speakers of the evening were the aforementioned members of the faculty and Vice-Chancellor Lee Ginsburg, who did a wonderful bit of pinch hitting. Some of the speakers spoke of the advantages of joining a fraternity, others told—but what's the use of writing what they said? It would be censored anyway. The speeches were followed by songs, dances, parodies, and a very enlightening movie, "The Professional Optometrist."

The greenish tint on the faces of some of those present was not due to excessive food or drink, but to the smoking of El Ropo 24.

After most of the members and guests were well under the alfluence of incohol (hic), we had an old-fashioned community singing session in which everyone took part. Some of the classical numbers were "Beer Barrel Polka" and "Who threw the whiskey in the well."

Orchids to Brother Gottesman and his ad book committee for doing a good job; to (Please turn to page 11)

Timed with the commencement of the new freshman class, O. E. Phi held its Freshman Smoker at the Hotel Gardner on Friday evening, September 17. As stressed by President Wilson, in addressing the new men, the purpose of the smoker was primarily to introduce the freshmen more informally to the faculty, O. E. Phi and its upper classmen, and to each other, thereby facilitating orientation and dispelling the fears engendered by strange and unfamiliar surroundings.

After a period of general intermixing, ceremonies were begun with a short address of welcome by President Wilson and the introduction of O. E. Phi officers and faculty members. Present among the faculty were Dean Green, Drs. Cline, Wekstein, Hochstadt, Smith, Antanelis, Kuhn and Farnum, Mr. Gross and Mr. Fogg, and members Baker and Saltzman of the clinical staff. In addressing the group, Dean Green reaffirmed his support of the fraternities and their extra-curricular social functions and expressed his appreciation of this opportunity to greet the new freshman class informally.

Entertaining the gathering as guest of M. C. Charles Galloway was Mr. Don Good of the American Optical Company. After a short discourse on the history and therapeutic value of hypnosis, Mr. Good demonstrated, with the help of seven volunteers from the audience, the 3 stages of hypnosis: lethargy, actual hypnosis, and somnambulism. His efforts proved both successful and entertaining, and those who later witnessed Mr. Good's prowess with a deck of cards will attest still further his attributes as an entertainer.

After this demonstration, a group of short sport films were shown, among which were the 1947 All-Star baseball game and the 1948 National Inter-Collegiate and Invitational Basketball Championships. At the conclusion of this part of the entertainment, all partook of the refreshments and, doing what comes naturally, (Please turn to page 11)

Page Nine

# Soph-lites

Class Personalities:

Leo "The Charmer" Kershner vigorously burst into laughter during a lecture. We saw him in the hall a few minutes later and asked the reason for this breach of classroom etiquette. He laughingly replied, "It's my turn in the barrel Wednesday." We still don't get it.

One of these days we're going to find out how many sandwiches Brother Land brings to school each day. It seems that he's always munching on one, between periods, during lunch hour, and at every other spare moment. We guess that he must have his chauffeur help him lug his lunch bag up the stairs. It certainly is too heavy for one person.

\* \* \* \* \*

This month we decided to delve into one of the mysteries which exist at M.S.O. To help us we enlisted the invaluable aid of Sahly "Clandestine" Urbanschitsch. Sahly is well known to the F.B.I., Scotland Yard, and the French Sureté for his brilliant deductions which have proved 100% accurate 6% of the time.

The first mystery we wanted him to solve was why so many boys are seen walking into class with bashed-in beaks. This is Sahly's report verbatum:

"I noticed that all these fellows also had neatly combed hair. So I brilliantly deduced that they used very vigorous motions in combing downward and therefore encountered their noses before coming to a full stop. Evidently

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these boys would have to have a lot of energy, because their noses were so red. This theory I soon discounted though, because the boys didn't look energetic at all. Then a brilliant idea struck me. . . "The boys comb their hair in the men's room . . . maybe I can find out what happens in there."

Upon entering, I stood adjusting my tie before the mirror—and then it happened. Wham! The door opened; and hurray, I had painfully

found the answer.

### SIGHTS WE NEVER EXPECT TO SEE

- —Milt "Samson" Gallin taking vitamin pills.
- —Egon Werthamer not writing a letter or editorial in class.
- Lenny Samit turning down a date, blind or otherwise.
- —Tom Lesniak not griping about the mimeograph machine's not being paid for.
- —Cote not staggering around.
- Rodolico without one sort of raffle ticket or other to sell.
- —Nathan Frank ordering "Yankee" Pot Roast.
- —Aaron Abrams speaking in a loud booming voice.
- —The commuters walking instead of running for the exits when the day's final bell rings.
- —Joy Chan Pong sitting somewhere other than next to Bob Moody.
- —Ye Editors not waiting until the last day before writing this column.
- —The Shpirit of the class to sag.

### Subnormal Vision

(Continued from page 6)

vision patients. After the lecture Dr. Feinbloom invited questions, which he answered freely.

We are indebted to Dr. Feinbloom, and to Zeta Chapter of Omega Epsilon Phi who sponsored his appearance, for a most valuable and informative experience.

### MSO ALUMNI MEET

Just before the Northeast Congress officially opened, the MSO alumni present met and nominated the following candidates for office:

President	Dr. Paul S. Cline
Vice-Presidents	Dr. John Quinn
	Dr. Robert I. Krause
	Dr. Hyman Rossen
Secretary	
Treasurer	Dr. Arthur Harris
	Dr. Arthur Veaner

### Advisory Board:

Dr. Asarkoff	Dr. Greenblatt
Dr. Anapole	Dr. McDermott
Dr. Bergman	Dr. Namias
Dr. Emmons	Dr. Storer

# **Optometric Congress**

(Continued from page 4)

page is as truly tri-dimensional as the winding of an armature or the tending of a loom.

- 11. Visual processes are dominant processes of development; there is a visual dominance which makes what we are today the product of our visual experience yesterday. Vision and intelligence are one and the same. The blind are taught mainly by supplying them with tri-dimensional space perception.
- 12. Distortions in visual space manipulations are inevitably reflected in the symbolic seeing process.
- 13. (a) The retarded reader is a visual problem and not the problem of a failure in the pedagogical process.
- (b) The child does not bring a visual problem to school: the school creates the visual problem. 20% of entering school children have visual problems, 2½ grades later 40% and still 2½ grades later 80% of all school children possess visual problems.
- (c) Acuity and the high order of achievement do not exist co-existensively in time.

Further lectures on visual training in terms of three dimensions were given by Dr. Wolfgang Koehler, Dr. J. Max Daniel, and Dr. Skeffington.

# **Optometric Pathology**

(Continued from page 5)

when moved rapidly, producing line-like scotomata.

Several theories have been offered to explain the fatigue fields. Wilbrand believes that the insufficiency of the retina is due to changed conditions of metabolism, affecting the external layer of the retina. Peters believes such fields to be due to a disturbance of innervation in the transmission of nerve stimuli from the retina to the optic tracts. Plazek thinks that there is a blunting of the center of consciousness, while Schmidt-Rimpler believes that inattention and lack of powers of concentration account for the contraction of the visual fields.

# Pi Omicron Sigma

(Continued from page 9)

Brother Irv Rapoport and his committee for obtaining the "Back Bay Bluebloods" as entertainers; to Brothers Chessel, Ginsburg, Badiglian, Rapaport and Monsein for preparing the hundreds of sandwiches that were gone so quickly; to everyone present for making it a most enjoyable smoker.

B'eye all, eye'll be seeing U.

# Omega Epsilon Phi

(Continued from page 9)

engaged in a group song feast, exchange of jokes, or discussions on optometry depending on their momentary interests. With every assurance from Dr. Hochstadt that a quiz was not to follow the next day, the spirit was unusually and securely high!

About midnight, those with professed propriety or Saturday classes bowed out leaving us "herring-eaters" and hollow-legged characters to continue quenching our thirst and exchanging yet untold stories, which probably should have remained that way.

This affair marked the year's first of a series of such events O. E. Phi has planned for the student body, and with this one success behind us, we look forward to a bright year. Will someone please tell me how I ever wound up behind that vacuum cleaner?



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